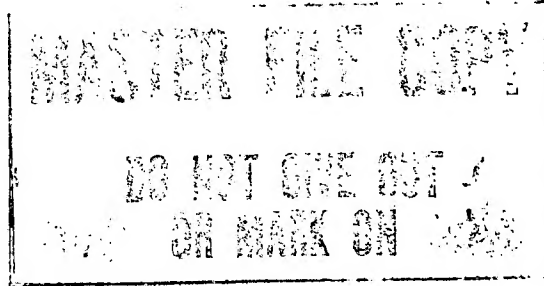




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West Germany: Conventional Force Modernization Lags



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An Intelligence Assessment

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EUR 84-10185
September 1984

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West Germany: Conventional Force Modernization Lags

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An Intelligence Assessment

This report was prepared by [redacted]
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**West Germany:
Conventional Force
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Key Judgments

*Information available
as of 15 August 1984
was used in this report.*

West German national defense plans for 1985-90 fall far short of meeting the force goals established by NATO for the Bundeswehr, which will undermine the Alliance's defense in the central region. Bonn is allocating a larger share of its defense budget to weapons development and procurement—including nearly a 9-percent increase in funding for research and development. Because of defense budget constraints, however, major procurement programs still are being delayed or postponed and, in our view, no action will be taken on other serious deficiencies:

- Procurement delays have slowed the introduction of Leopard II tanks, self-propelled artillery, antitank helicopters, Alpha Jet and Tornado aircraft, frigate-class naval combatants, and naval air defense systems.
- Procurement of Roland air defense missile systems for Tornado bases is still contingent on implementation of the US-West German air defense agreement that would free funds for Roland procurement, and firm plans for short-range point defense at tactical airfields have not been developed.
- All three services face substantial shortfalls in ammunition stockpiles, and the ground forces have less than 25 percent of the required war reserve stocks of tanks, infantry combat vehicles, antitank weapons, artillery, and air defense systems.

In addition to hardware shortages, the Bundeswehr will face a severe manpower crunch through the end of the century; after 1985 the number of draft-qualified males will drop to about half of what is required to maintain a 495,000-man force:

- Compensatory measures—extending conscript service time, lowering physical standards, and recruiting women for noncombat duty—are likely to spark political controversy, and the Bundeswehr probably will oppose lower personnel standards.
- Attracting more volunteers for extended service would require improved wage and benefits packages that, according to Chancellor Kohl, would have to be funded within existing budget limits.

The large budget deficit, the opposition of key cabinet figures, and strongly adverse public opinion, in our view, will prevent the Kohl government from closing the gap between NATO and West German modernization goals:

- Bonn will, for the foreseeable future, give first priority to consolidating its public debt in order to win public confidence in its ability to promote economic recovery.
- Finance Minister Stoltenberg, whose popular appeal has given him a powerful voice in Bonn, opposes any increase in government spending and argues that additional Federal revenues should be used to lower the national debt.

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- Foreign Minister Genscher also has rejected Defense Minister Woerner's proposals for increased defense spending and is advocating disarmament and confidence-building measures instead of further military buildup.
- In public opinion surveys conducted last year, 63 percent of the respondents objected to increased defense spending, and 61 percent opposed strengthening West German forces.

The Defense Ministry is trying to compensate by increasing emphasis on international cooperation to rationalize research and development and lower procurement costs:

- Bonn prefers to seek cooperative weapons programs with the United States, but the Kohl government's attitude toward bilateral projects is conditioned by the large imbalance in US-German defense trade. We expect Bonn will continue to insist on arrangements with 100-percent offset to force US procurement of German equipment.
- Bonn also is stressing joint armaments projects with its European partners in order to strengthen West German defense industries. In addition to bilateral programs—particularly with France—Bonn is looking for a stronger Western European Union to promote multilateral European defense cooperation.

We believe that the same economic and political considerations that are constraining Bonn's conventional force improvements will increasingly affect Bonn's approach to bilateral defense issues. Thus, we expect German resistance to several key US initiatives within NATO including burden-sharing, participating in the Master Restationing Plan—which would relocate the equivalent of three US brigades east of the Rhine River—and fully supporting the emerging technologies initiative.

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Contents

	<i>Page</i>
Key Judgments	iii
Introduction	1
Force Planning for the 1980s	1
Ground Forces	2
The Navy	4
The Air Force	5
The Manpower Crunch	6
Prospects for Increased Defense Spending	7
Looking for Alternatives	8
Arms Cooperation With the United States	8
Cooperation With Other European NATO Countries	9
Implications for NATO	11
Impact on US Policy Interests	11
Burden Sharing	12
NATO Infrastructure Funding	12
Emerging Technologies Initiative	12
 Appendix	
West German Force Goals Not Being Fully Implemented	13

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**West Germany:
Conventional Force
Modernization Lags**

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Introduction

The intense political controversy surrounding initial INF missile deployments, coupled with public debate over NATO's reliance on nuclear weapons, have led many West German leaders to argue that substantial improvements must be made in NATO conventional forces. At the same time, West German defense experts, citing the large Warsaw Pact advantage over NATO in conventional force capabilities, have begun questioning the credibility of NATO's flexible response doctrine which hinges on the maintenance of a deterrent triad of strategic nuclear forces, intermediate- and short-range nuclear forces, and conventional forces. These concerns, generally shared among the major political parties, have led Chancellor Kohl and Defense Minister Woerner to advocate a substantial upgrading of the Bundeswehr both to redress the gap in NATO-Warsaw Pact capabilities and to raise the nuclear threshold.

The Kohl government's effort to improve West German conventional forces, however, faces serious obstacles. Because of a national fiscal austerity program, Bonn is now planning near zero real growth in defense expenditures over the next five years. In addition, a severe shortage of draft-age males through the end of the decade will challenge Bonn's ability to maintain current manpower levels. As a result, we expect the gap to widen between West Germany's force modernization requirements and programmed improvements—a development that will put additional burdens on other NATO defense establishments, particularly the United States.

This paper reviews current West German force planning and its relationship to NATO goals, evaluates the prospects for increased defense spending and program enhancements, and assesses the options for dealing with austerity and the manpower crunch. Finally, it assesses the impact of these developments on key US-West German defense issues.

Force Planning for the 1980s

The members of the Alliance have acknowledged the inadequacies of NATO's conventional forces for a number of years. This was one factor behind their 1977 agreement to increase national defense budgets by 3 percent in real terms annually. Because West Germany contributes 50 percent of NATO's land forces, half of the ground-based air defense system, 30 percent of all combat aircraft, and 70 percent of NATO's naval forces in the Baltic, Bonn's cooperation is key to achieving the 1985-90 NATO force goals and preserving NATO's ability to counter Warsaw Pact aggression.

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Despite its commitment to improve West German conventional force capabilities, the Kohl government has been unable to gather the political or fiscal wherewithal to meet NATO force goals or even West Germany's more modest national force plans. In establishing the 1985-90 Alliance force goals, NATO military authorities concluded that West Germany needed more than 3-percent annual growth in defense spending to provide an effective deterrent to Warsaw Pact forces. West Germany has achieved a 3-percent real growth rate in its defense budget in only one year since 1978 and will fall short again in 1984 (see figure 1). During a Defense Review Committee (DRC) meeting this April, the Allies relented a bit but still brought the West German force goals into line with the 3-percent standard.

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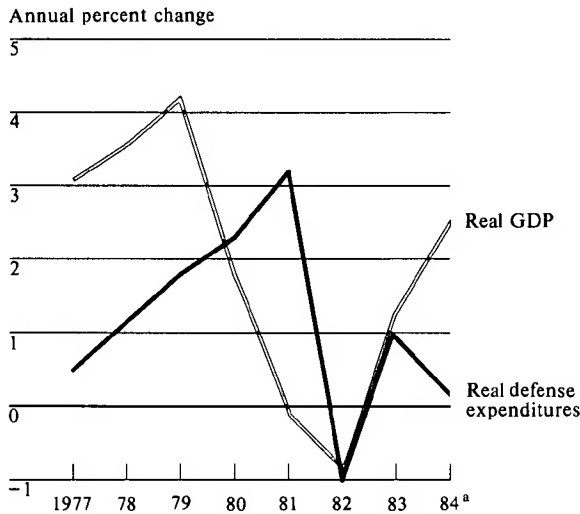
In its own force planning, West Germany responds nominally to most major NATO force goals, but Bonn will fully meet in real terms few of the NATO requirements. The defense budget is projected to rise nominally by 3.3, 3.7, and 3.6 percent, respectively, in 1985, 1986, and 1987; because of inflation, the real growth rate in defense spending is likely to be near

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Figure 1
West Germany: Defense Spending, 1977-84



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zero through 1987 (see table 1). As a result, a number of key programs are being delayed or stretched out beyond the 1985-90 planning period, and implementation of others is being postponed until after 1990:¹

- Of NATO's 214 force proposals for West Germany, more than 40 percent require only that studies be completed; Bonn will go forward with these.
- Of the remaining goals, all of which require expensive force improvements, only one-half are fully covered in West Germany's national plans.
- According to figures Bonn has provided to NATO, the Kohl government plans to spend an estimated \$128.8 billion during 1985-90 to implement its national defense plan. We estimate Bonn would need an additional \$13 billion over the five-year period to meet NATO proposals not included in its national plans.

¹ See appendix for details on the gap between West German national plans and NATO's force goals for Germany

The West German representative at the April DRC meeting acknowledged the shortfall in Bonn's plans but said the Bundeswehr has prepared contingency plans should additional defense funds become available. Bonn would not make them public or share them with Allies at that time.

In his budget decisions, Defense Minister Woerner has emphasized measures that will directly enhance West German combat strength or improve the morale and effectiveness of Bundeswehr soldiers. He plans, for example, to allocate a larger share of the 1984 defense budget to weapons procurement, research and development, and the construction of new facilities. Research and development funds will increase by 8.6 percent (see table 2), an emphasis probably reflecting Woerner's desire to overcome West German technological limitations in the defense area.

The Defense Ministry is allocating procurement funds mostly for reconnaissance, support, and command, control, and communications (C3) equipment. Woerner has stated in press interviews that such peripheral equipment is necessary to ensure that new weapon systems will be fully effective. The Inspector General of the Bundeswehr recently remarked, however, that funding in these areas still is inadequate, particularly for C3 systems. Furthermore, we believe that war reserve stockpiles are suffering because of the emphasis on research and development, procurement, and other capital investment programs.

Ground Forces

The Bundeswehr's 12 divisions—comprising approximately 50 percent of NATO land forces in the region—are assigned to the Allied Command Europe and are backed up by 12 active and reserve home defense brigades. NATO force goals for the Army are designed to enhance its fire power and sustainability. Specifically, they call for the procurement of new tanks, antitank helicopters, an all-weather antiarmor missile system, and improved munitions for antitank guided weapons; modernization and procurement of additional artillery assets; a build up of ammunition and supplies to support the Army for 30 days; and creation of electronic warfare units for divisions.

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Table 1
Fiscal Projections ^a

1983 billion US \$

	Actual		Estimates		
	1983	1984	1985	1986	1987
Real GDP growth	1.3	2.5	2.5	2.5	2.5
Federal expenditures ^b	95	96	94	94	95
Real growth	0.3	1.2	-1.8	0-1	0-1
Defense expenditures	22	22	22	23	23-24
Real growth	1.0	0.2	0.3	0-1	0-1
Net additional indebtedness	12.1	12.9	9.2	10.0	8.9

^a Information from the Federal Republic of Germany's Reply to the Questionnaire for the 1984 Defense Planning Review.

^b Figures rounded to nearest billion.

According to national plans, the Army will give priority to maintaining current operational readiness during 1985-90, with emphasis on improving the efficiency and readiness of the individual soldier. Equipment purchases will conform nominally with NATO force goals: combat systems including armor, antiarmor, air defense and field artillery; and "force multipliers" that enhance combat efficiency, such as advanced communications, reconnaissance, and nuclear, biological, and chemical defense equipment (see table 3). However, many critical NATO force goals will not be met or their implementation will be delayed:

- Replacement of 1950s-vintage M-48 tanks with Leopard models and conversion of gun-equipped tank destroyers to the TOW antitank guided missile system will not be completed until late 1985, a one to two year delay in earlier plans. Fielding of 1,800 Leopard II tanks will not be completed until 1987.
- Procurement of additional antitank helicopters also has been delayed, although the West Germans have signed a memorandum with the French to produce the PAH II helicopter during the 1990s.
- The Army will not replace its M-109 artillery with a new self-propelled 155-mm howitzer until 1988-93. The Army also does not plan to introduce the Multiple Launch Rocket System until 1987-92. Both were to have entered service in 1990.
- A new shoulder-fired air defense weapon, probably the Stinger, will not begin to replace the Redeye system until 1987.
- Shortfalls in weapons and ammunition stockpiles will continue to limit sustainability. NATO goals call for stockpiles sufficient to support land forces for at least 30 days of combat, but West Germany's stocks will still be well below that goal until 1990 (see table 4).
- Failure to enhance intelligence collection capabilities will force the West Germans to continue relying heavily on US assets.
- Command and control capabilities will continue to be susceptible to Warsaw Pact jamming because of a delay in forming additional electronic warfare units.

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Table 2
West German Defense Budget, 1984

Program Element	Billion \$	Percent Change From 1983
Total	18.5 ^a	2.8
Research and development	0.8	8.6
Military procurement	4.8	6.5
Military installations	0.8	8.3
Other investments	0.2	10.9
Personnel costs	7.5	0.6
Material maintenance	1.7	1.1
Other operations	2.7	-0.1

^a Ministry of Defense Budget summary. Table 1 represents NATO definition of defense expenditures which includes additional spending categories.

The Navy

The West German Navy is a coastal defense force tasked with protecting against sea attacks and contributing to the defense of the Baltic and North Seas. Its modern fleet includes coastal submarines, destroyers and frigates, coastal escorts, fast patrol boats, mine warfare forces, maritime patrol aircraft, and helicopters. NATO force goals emphasize the continuing modernization of the fleet with a new class of frigates, fast patrol boats, mine warfare vessels, and Tornado aircraft. NATO has also taken note of weaknesses in the Navy's electronic warfare (EW) capabilities by calling for additional EW equipment for escorts and fast patrol boats, counterjamming and deception capabilities, and mechanical countermeasures for defense against antiship missiles.

NATO force goals are clearly reflected in current national plans. The Navy's three Luetjens-103 class destroyers will be modernized during 1984-86, and a new class of frigates will be developed in the mid-1990s. Twelve of the 18 class 206 submarines will be modernized from 1986 to 1990. A total of 112 Tornado aircraft will be procured and operational by 1988. The Sea King Mk 41 helicopter will be given an attack/reconnaissance capability. Three coastal radar stations will be constructed.

Table 3
Major Weapons Procurement Plans, 1980-90

Equipment	Quantity
Army	
Leopard II tank	1,800
TOW antitank weapon conversion to TOW 2	356
PZH 155-1 howitzer	400
M-109 howitzer improvement program	486
Multiple artillery rocket system/multiple launch rocket system	200
Stinger	418
Fuchs armored personnel carrier	996
Navy	
Frigates, 122 class	6
Submarines, 206 class	18
Tornado aircraft	112
Conversion of Sea King Mk 41 helicopters	28
Mine countermeasure vessels, 343 class	10
RAM air-to-surface missile	20
HARM air-to-ground missile	470 ^c
Air Force	
Patriot air defense missiles	8
Tornado aircraft	210
Advanced medium-range air-to-air missile	2,100
Maverick air-to-ground missile	4,960
Pershing 1b missile system	72

Budget restrictions have, however, affected a number of key programs:

- The Navy has no plan to modernize air defense artillery as called for in the NATO force goals.
- The Navy's multipurpose helicopter program has been delayed, and a number of logistic support improvements are being postponed.
- Electronic warfare jamming and deception capabilities, which are inadequate, will not be upgraded.
- Delays in providing nuclear, biological, and chemical protection, detection, and decontamination equipment will continue to limit the Navy's ability to operate in contaminated environments.

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Table 4
Stockpiling of Artillery
Ammunition and Weapons

Percent of 30-Day Supply

	1984	1990
Ammunition		
35-mm antiaircraft gun	77	100
105-mm main battle tank	80	87
120-mm main battle tank	51	82
155-mm howitzer	38	71
203-mm howitzer	17	89
110-mm light artillery rocket system	74	92
Antitank guided missile MILAN	80	100
Antitank guided missile HOT	40	100
Antiair guided missile Roland	71	100
Weapons		
Main battle tanks	12	21
Mechanized infantry combat vehicles	10	10
Antitank guided missile HOT launchers	20	20
Antitank guided missile TOW/MILAN launchers	7	8
Artillery pieces	11	11
Antiaircraft weapons	5	5

There are indications that the Navy would like to reorient its force to a more offensive strategy. According to the US defense attache, a recent Defense Ministry study concluded that by enhancing its submarine forces, the Navy could better defend against Warsaw Pact naval threats to shipping in the North Sea. Reorienting the Navy in this fashion would require modernizing the submarine and helicopter forces, but we believe funds will not be available for a program of this magnitude for several years. The Ministry of Defense has given the Navy little attention in recent years, and we see no indication this situation will change. [REDACTED]

The Air Force

The West German Air Force plays a major air defense role over the Central Region, contributes to NATO's conventional and nuclear attack capabilities, and conducts reconnaissance operations. It devotes 60 air defense aircraft, 204 offensive aircraft, 60 reconnaissance aircraft, 60 surface-to-air missile batteries, and eight surface-to-surface missile squadrons to these tasks. NATO force goals for the Air Force require continued modernization of attack squadrons and major improvements in air defense. Specific goals include increasing the number of Alpha Jet aircraft in each squadron from 18 to 21, acquiring air-to-air missiles, improving command and control systems, replacing the Pershing I surface-to-surface missile system, procuring air defense equipment for airfields, and replacing the Nike surface-to-air missile system.

West Germany's 1985-90 modernization plans include expensive programs designed to respond to major NATO force goals. F-104 Starfighters will be replaced by 210 Tornado aircraft, and 24 Nike air defense units will be replaced with the Patriot missile system. West Germany also will join with France, the United Kingdom, Spain, and Italy to develop common requirements for a European combat aircraft. In addition, the Pershing surface-to-surface missile system will be modernized with either a conventional or a nuclear replacement for the Pershing I. [REDACTED]

Because of inadequate funding levels, however, the Air Force will be faced with delays in equipment acquisition and facility construction:

- Plans to provide all West German airfields with an all-weather air defense capability were abandoned when the Roland program was canceled in 1981. The West Germans hope to provide Roland systems for Tornado bases, but this is still contingent on implementation of the US-West German air defense agreement that would free funds for Roland procurement.

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- Several programs to enhance the capabilities of existing aircraft—such as procuring advanced air-to-air missiles and acquiring antiradiation precision guided munitions—either are only “under study” or have been postponed until after 1990.
- Completion of the aircraft shelter program, scheduled for 1986, has been postponed until the late 1980s, and firm plans for the short-range point defense of tactical airfields have not been developed fully.
- F-104 Starfighter and RF-4 and F-4F Phantom aircraft will continue to be susceptible to Warsaw Pact electronic warfare because of the absence of jam-resistant secure voice radios. [redacted]

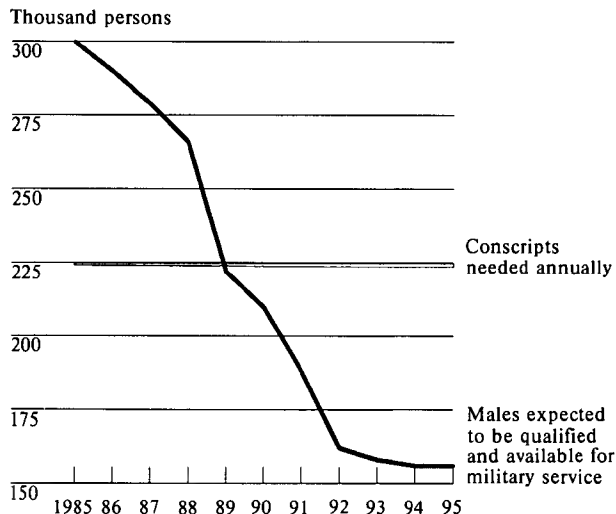
The Manpower Crunch

In addition to procurement delays, West Germany will face a serious decline in the number of males available for conscription starting next year, and Bonn may not be able to sustain the Bundeswehr at its present 495,000-man strength.² By the end of the decade, the estimated number of conscripts and volunteers available will fall well below the Bundeswehr's personnel requirements (see figure 2). This picture is not expected to brighten until after the year 2000, when the number of draft-age males will begin rising gradually. [redacted]

Bonn has considered a number of solutions to the manpower problem—none of which is yet considered fully acceptable militarily or politically:

- *Reduced Active Duty Strength.* According to press reports, Woerner at one point considered cutting back the 495,000-man Bundeswehr—by decreasing either the number or size of military units—to the neighborhood of 420,000 to 450,000 soldiers. [redacted]

Figure 2
West Germany: Manpower Requirements and Availability of Conscripts, 1985-95^a



^a West German military personnel experts explain that they must induct about 225,000 soldiers each year in order to maintain the armed forces at its present level of 495,000 men. According to the US Defense Attache's office in Bonn, volunteers rushed to the military last year during a time of deep unemployment. There were 13,000 volunteers seeking 2,000 officers' billets and 34,000 candidates for the 17,000 enlisted spaces. It is not clear whether this situation will continue in the future. The number of volunteers probably will depend on the state of the economy and the public's attitude towards military service.

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- *Increased Volunteers.* The Defense Ministry will continue to seek volunteers who enter the Bundeswehr for a period of 21 months to 15 years rather than the normal conscript time of 15 months. The Defense Ministry believes, however, that in order to attract both male and female volunteers for sustained service, Bonn will have to offer more attractive wage and benefits packages that will place additional demands on the defense budget. Chancellor Kohl admitted to the US Ambassador that such packages would be extremely costly. At the same time, Kohl has stressed that any wage increases will have to be financed within existing budget limitations. Since a package involving anything other than token increases would have a major impact on other defense programs, we doubt the Kohl government sees it as a realistic solution to the manpower problem.

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- **Low Cost Options.** Woerner has focused instead on extending the length of military service for draftees, allowing women to volunteer for noncombat duty, and lowering physical standards. State Secretary Kurt Wuerzbach stated in April that Woerner wants to extend mandatory military service time from 15 to 18 months beginning in 1988. This move could provide the equivalent of an additional 42,000 soldiers but is likely to generate considerable political and popular opposition. He also noted Woerner's desire to allow approximately 15,000 women to join the Bundeswehr. No women now serve in the armed forces, and this option also is likely to be controversial. Finally, Woerner has proposed lowering physical standards, which could provide an estimated 12,000 more recruits. While the least controversial politically, this option is likely to be resisted by the Bundeswehr leadership because of its impact on combat effectiveness. [REDACTED]

If Bonn were to increase conscript time, allow women to volunteer for noncombat duties, and lower physical standards, we believe the manpower gap of approximately 69,000 anticipated by the Defense Ministry in 1995 would be filled. But the government would pay a political price for implementing these steps, and it is not yet clear that it is willing to do so. In our view, the government may well opt for incomplete solutions that would leave the manpower gap only partially filled.

[REDACTED]

Prospects for Increased Defense Spending

The unexpected pace of West Germany's economic recovery raises the possibility that additional revenues will be available for defense spending over the next few years. Private forecasters now project real GNP growth for 1984 at 2.5 to 3.5 percent and a 3.0-percent inflation rate. If these new forecasts hold true, CIA's model of the West German economy predicts Bonn will receive approximately \$4.1 billion in additional tax revenues this year. We believe, however, that it is highly unlikely, at least over the short term, that West Germany will meet the NATO goal of a 3-percent annual increase in defense spending because of both the current direction of Bonn's fiscal policy and the lack of public support for more military spending. [REDACTED]

Despite the brightening economic picture and public statements by Chancellor Kohl and Defense Minister Woerner in favor of upgrading the conventional force, other key government leaders are opposed to additional defense spending. According to the US Embassy, Finance Minister Stoltenberg—while guardedly optimistic about the economy—opposes any major rise in the defense budget because of its potential impact on government deficits. Stoltenberg, whose popularity among the West German public has given him a powerful voice in Bonn, is expected to oppose any increase in government spending and will argue instead that increases in government revenues should be used to lower the national debt. [REDACTED]

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In fact, the size of the budget deficit—and its salience as a political issue—will make it virtually impossible for Kohl to increase defense spending. Rising social and defense expenditures, together with recession-induced tax losses, pushed West Germany's budget deficits to unacceptably high levels in the late 1970s and early 1980s. Bonn has forecast that its net additional indebtedness will rise by \$12.9 billion in 1984, reaching roughly 13 percent of total government expenditures. After that, the government anticipates that the deficit will continue to increase, although somewhat more slowly (see table 1). [REDACTED]

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[REDACTED]

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Genscher believes that West Germany should focus on disarmament and East-West confidence-building measures rather than on a military buildup. [REDACTED]

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However, he also may be motivated by public opinion polls indicating that West Germans attach greater priority to social welfare spending, which takes a larger share of the federal budget than defense (see figure 3). [REDACTED]

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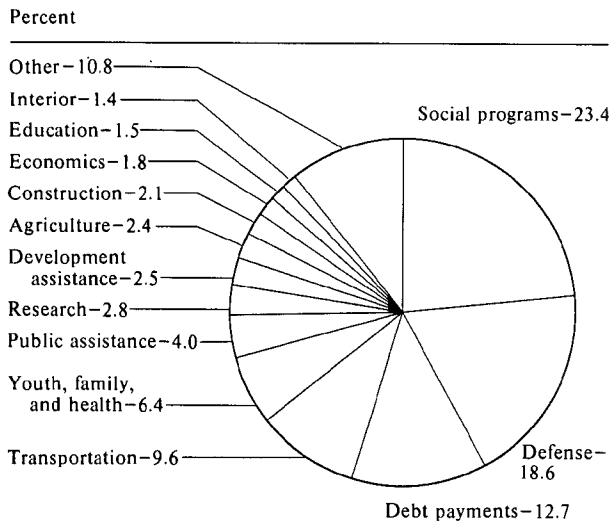
Any increase in public support for high defense outlays also will require a shift in popular attitudes on the nature of the military threat to Germany. Polls conducted last year by a respected research institute

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Figure 3
West Germany: Draft Budget, 1984



indicated that, although 36 percent of those polled viewed Warsaw Pact forces as superior to NATO's and only 13 percent saw NATO forces as the stronger, 63 percent objected to increased defense spending and 61 percent opposed strengthening the West German armed forces within the NATO framework. A plausible explanation may be reflected in a United States Information Service poll conducted at about the same time, which revealed that 85 percent of the West Germans considered it unlikely that the Soviet Union would attack Western Europe in the next five to 10 years.

In our view, Kohl's reluctance to press for higher defense spending reflects both his concern over public reaction and apprehension over sparking a divisive debate within the governing coalition. With opposition to a higher defense budget from both Genscher's Free Democrats and Stoltenberg, who like Kohl and Woerner is a Christian Democrat, Kohl probably is uncertain of his ability to rally sufficient support both within his party and the coalition. He also appears particularly reluctant to counter public opinion on

defense issues when US-West German relations are involved. West Germans are well aware of US pressure on Bonn to increase its defense budget. Should Kohl agree to major spending increases, he could be portrayed as being subservient to the United States. We believe, therefore, that he will seek to avoid controversial proposals at a time when his leadership and German independence from the United States are being questioned.

Looking for Alternatives

According to the US Embassy in Bonn, the Ministry of Defense recognizes that there is little chance of a budget increase that would let Bonn meet its NATO commitments. Even if more money were forthcoming, Kohl has said it would likely go to improving personnel benefits in order to attract recruits. As a result, the Defense Ministry is placing more emphasis on arms cooperation programs to rationalize weapons development programs and to lower unit costs. West Germany has been struggling for some time to increase its participation in US arms production and procurement; more recently, Bonn has been looking to its European neighbors, particularly France. While these cooperative programs could begin to reduce defense costs in the 1990s, they will have little impact on the problems West Germany faces for the rest of this decade.

Arms Cooperation With the United States

West Germany places great emphasis on arms cooperation with the United States (see table 5). It has had some success with coproduction programs involving licensed production, in terms of gains of US technology and of economic benefit from sales to third parties. Current programs include several sophisticated systems, such as the AIM-9L Sidewinder air-to-air missile and MODFLIR thermal imaging equipment; Bonn also is expected to lead a European consortium that will produce the US-developed Stinger air defense system. The Germans are wary, however, of entering into licensed production agreements with the United States on major weapons programs, partly

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Table 5
US-West German Armaments Cooperation

Codevelopment Programs	US Procurement of German Equipment	German Purchase of US Equipment
Family of advanced air-to-air missiles Air-to-surface missile Long-range standoff missile ERMISS minesweeping system Low-cost powered dispenser for fixed targets NATO Seasparrow surface missile system Multiple launch rocket system Terminal guidance warhead	120mm tank gun and ammunition Administrative use vehicles European telephone system EIFEL data management and air command control MAN 10-ton truck 5.56mm plastic training ammo NBC marking kit	I-HAWK M-109 155-mm howitzer MK-46 Antisubmarine torpedo NATO AWACS Maverick air-to-ground missile Harpoon antisurface ship missile
German Coproduction of US Systems	Potential Cooperative Initiatives	Potential US Acquisition of German Equipment
MODFLIR thermal imaging AIM-9L air-to-air missile Stinger man-portable air defense system	Pershing 1b coproduction P3-C maritime patrol aircraft Maverick coproduction EIFEL command and control system follow-on AH-64 helicopter mission equipment package 120-mm ammunition racks 120-mm training ammo	Rapid runway repair equipment Chemical defense equipment Airfield attack submunitions 50 Cal and 7.62-mm plastic training ammo Smoke mines Grenade fuze Personal dosimeter device Low-altitude dispenser mechanism

because the royalties often push costs too high. For example, Bonn once considered producing the Patriot air defense missile system, but opted instead for a less costly offset arrangement in which US procurements from West German defense firms will approximately equal what Bonn will spend on Patriot (see box). [REDACTED]

Moreover, the Kohl government's attitudes toward cooperation with the United States are conditioned by the large imbalance in US-German defense trade—on the order of 13 to 1 between 1977 and 1982—and by what Bonn views as one frustrating failure after another in negotiating procurement programs in recent years. As West German skepticism over US intentions to procure West German-produced defense

items has grown, Bonn has become more insistent on having a complete offset when it considers procurement of major equipment from US manufacturers. This approach proved successful in the Roland-Patriot air defense agreement. In the future we expect that Bonn will continue to insist on arrangements with 100-percent offset in order to force US procurement of West German defense equipment. [REDACTED]

Cooperation With Other European NATO Countries
Bonn's interest in working with other Europeans has increased as its frustration with the US has grown. It

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US-West German Roland-Patriot Air Defense Agreement

In accordance with the agreement signed in Brussels in December 1983 and in Washington in July 1984, the United States will buy 12 Patriot fire units, plus two units for training, maintenance, and logistic support. These will be made available to the West Germans. Bonn will buy 12 additional units, plus two for training and spares. Germans will man, operate, and maintain all 28 units. Each fire unit consists of a radar, an engagement control station, a power generator, and four launchers, each of which carries four Patriot missiles.

The West Germans will provide 27 Roland missile systems for the defense of three US main operating bases at Sembach, Wiesbaden, and Rhein Main. These will be manned, operated, and supported by the German Air Force for 10 years. In addition, the West Germans intend to buy 60 Roland fire units, plus eight backups for the protection of German air bases.



Patriot launch from standard four-round firing unit.

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West German Roland system on Marder chassis.

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has shown particular interest in expanding Franco-German programs, which in the past have included the Roland air defense system and the Alpha Jet aircraft (see table 6). According to press reports, the major current Franco-German program—the PAH II antitank helicopter—will bring approximately \$325 million worth of development work to West Germany and an additional \$1.2 billion in equipment sales. Late last year Bonn also announced a joint study with France, the United Kingdom, Italy, and Spain to determine the feasibility of developing a new fighter aircraft. The US defense attache reports that although the West German Air Force prefers the US F-16 or F-18, political considerations are pushing Bonn toward a European cooperative venture.

Bonn will continue to work in other forums to promote intra-European cooperative projects. It remains a member of the Independent European Program Group³ and supports a stronger Western European Union (WEU) for increasing arms cooperation arrangements. While the West Germans would prefer to

³ The Independent European Program Group (IEPG) was formed in the mid-1970s. Participants include all members of NATO's Eurogroup—Belgium, Denmark, West Germany, Greece, Italy, Spain, Luxembourg, the Netherlands, Norway, Portugal, Turkey, and the United Kingdom—plus France. This independent organization is the principal mechanism for promoting military equipment cooperation among the European Allies and for fostering closer and more balanced arms cooperation with the United States and Canada.

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Table 6
Principal Bilateral and Multilateral
Projects Between West Germany and Other
European NATO Countries

Program	European Partners
Antitank helicopter (PAH II)	France
HOT antitank guided missile	France
Third-generation antitank guided missile	France, United Kingdom
Armored self-propelled howitzer	Italy, United Kingdom
Second-generation antiship missile system	France
Advanced short-range air-to-air missile	United Kingdom
European combat aircraft	France, Italy, United Kingdom, Spain
Kormoran II air-to-surface antiship missile	France
Tornado aircraft	United Kingdom, Italy
Self-propelled howitzer 155-1	United Kingdom, Italy
Alpha Jet aircraft	France
MILAN antitank guided missile system	France, United Kingdom
Roland air defense system	France
Medium-range anti-aircraft missile system	France

work closely with the United States, we believe they will limit purchases of US military items when they believe doing so will stimulate their own production.

Implications for NATO

Bonn's failure to meet its NATO force goals will have an impact on the ability of the Alliance to mount an effective defense in the central region. The delay in aircraft procurement and inadequate air defense modernization will have particularly adverse effects on NATO's ability to maintain air superiority in central Europe and will increase NATO's reliance on external reinforcements, particularly from the United States.

While West Germany's ground force modernization program will, in our opinion, enhance NATO's initial defenses against a Warsaw Pact first echelon ground attack, inadequate stockpiles of weapons and ammunition will continue to inhibit NATO's ability to sustain combat operations. The Bundeswehr's failure to develop and procure additional reconnaissance assets and modern air-to-ground munitions also will restrict NATO's ability to neutralize Warsaw Pact follow-on forces. Moreover, shortfalls in maritime air defense and electronic warfare defenses will limit the Navy's survivability. Finally, delays in procuring improved communications equipment will hinder the Bundeswehr's command and control modernization and impact negatively on the interoperability of West German and other Allied forces.

Should the West German manpower problem not be resolved—a possibility we cannot rule out—NATO also may have to revise current war plans. West Germany now provides 50 percent of NATO's ground forces in the central region. If the Bundeswehr is unable to meet its NATO commitments, NATO may have to reconsider force deployment schemes or look to greater commitments from other nations for peacetime force deployments.

Impact on US Policy Interests

During the lean years of the late 1980s, Bonn will be more than usually influenced in its dealings with the United States by domestic politics and economics. We expect Chancellor Kohl will be particularly sensitive to any lingering political fallout from the controversial INF deployments. The Kohl government clearly believes it went out on a limb with its own supporters on INF; as a result, Kohl played down or postponed decisions on most other bilateral defense issues until deployments began. Bonn will be reluctant to undertake any new defense programs that it cannot finance within existing budget plans or that would have a negative impact on the West German economy.

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Burden Sharing

West Germany will strongly resist further increases in its burden-sharing obligations. According to the US Embassy, Bonn already believes it is contributing more than its fair share to NATO's defense. The West Germans argue that US critics fail to acknowledge that much of their economic burden is not reflected in budget numbers. They point to the \$15-billion worth of rent-free land used by Allied forces stationed in Germany, the 92,000 free housing units for Allied soldiers and their families, the economic and social burden on the West German public of NATO field exercises in Germany, and the \$5.4 billion contributed to the maintenance of Allied forces in West Berlin last year. []

Other burden-sharing issues, particularly West German participation in the Master Restationing Plan (MRP),⁴ also face stiff opposition. According to the US Embassy in Bonn, Finance Minister Stoltenberg has made it clear to Woerner that any Defense Ministry contribution to the MRP will have to come out of other defense programs. As a result, the Defense Ministry has concluded that MRP is all but dead. []

NATO Infrastructure Funding

West German contributions for improvements in military infrastructure—such as airfields, communications facilities, headquarters, pipelines and fuel storage, radar facilities, ports, and missile installations—will also be difficult to win. The Kohl government agreed during the December 1982 and May 1983 Defense Planning Committee ministerial meetings to increases in infrastructure funding for such NATO projects. The increases are too small to meet NATO requirements and goals, however, and no fully satisfactory solution is in sight. According to the US

⁴ The Master Restationing Plan was proposed to the West Germans in November 1980. It provides for relocating the equivalent of three US brigades to positions east of the Rhine River. The US Congress expects the West Germans to pay a substantial part of the estimated \$1.3-billion cost. Even though the Schmidt government agreed in March 1982 to begin work on resolving differences over MRP, the major progress achieved to date has been the formation of a joint committee of experts to review technical and administrative details. Both the Schmidt and Kohl governments have refused even to consider the development of a cost-sharing formula. []

Mission to NATO, Woerner recognizes the need for increased funding but Stoltenberg opposes major increases in the German contribution unless funds come from other defense programs. []

Emerging Technologies Initiative

During the Defense Planning Committee meeting in December 1983, Woerner voiced his support for the US-inspired NATO effort to exploit emerging technologies (ET). He stressed the need to improve NATO's conventional defense, the inability of individual countries to go it alone because of resource constraints, and the necessity of harmonizing competing demands. Despite Woerner's enthusiasm, however, the US Mission to NATO reports that senior West German Defense Ministry officials are skeptical of the prospects for ET. The initiative—as discussed thus far in NATO—focuses primarily on programs that can be implemented in the near term. NATO has selected 11 ET projects designed to field common systems—including weapon systems, advanced munitions, and support systems—by 1990. In order to participate in many of these programs, Bonn would have to either increase its defense budget or shift funds away from existing high-priority West German programs. Since in our opinion neither change is likely to occur, Bonn's support for ET probably will focus primarily on much longer term projects for the middle-to-late 1990s. []

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Appendix

West German Force Goals Not Being Fully Implemented ^a

Force Goal Number	Description	Status
Army		
EL 010	Complete study on how to mobilize additional reserves for NATO.	Under consideration.
EL 012	Complete assignment of permanent units to defend NORTHAG and CENTAG by end of 1985.	Bonn has not yet agreed to meet fully this responsibility because of a lack of forces.
EL 106	Confirm Nonrestricted ACE Mobile Force (Land) Commitment.	Extended implementation because of a lack of winter equipment.
EL 150	Improve deception capability.	Procurement of sophisticated training devices will depend on studies.
EL 335	Develop a computer-supported frequency management system.	Under consideration.
EL 501	Provide special weapons' tool kits to 6th Armored Division.	Under consideration.
EL 520	Increase the number of firing platoons in artillery special platoons.	This force goal will not be implemented.
EL 540	Complete the introduction of an automated artillery target engagement system.	System components will be procured by 1990.
EL 550	Improve nuclear weapon systems.	Delayed until political negotiations are completed.
EL 705	Maintain stocks of supplies and ammunition to support army for 30 days.	Postponed. Ammunition will, in general, be on hand in 1990.
EL 710	Develop and refine plans for improvements in logistic stockpiles.	Issue is part of long-term plans for late 1980s/1990s. Target date not yet set.
EL 720	Continue to implement measures for positioning of logistic stocks.	Delayed due to nonavailability of NATO funds and difficulties in land acquisition.
EL 756	Mobilize a cadre of medical personnel for use in AFCENT and AFNORTH.	Partial implementation because of a lack of personnel.
EL 806	Improve low-level air defense for AMF (L) units.	Force goal under consideration.
EL 822	Study possibility of providing rear area air defense.	Air defense for security convoys will not be provided except for 20-mm cannons assigned to security battalions.
EL 906	Establish corps-level electronic warfare unit to support LANDJUT.	Contribution delayed by lack of manpower.
EL 1005	Develop extended range surveillance and target acquisition systems.	Program delayed due to technical problems and delays in studies.
EL 1015	Provide for the enhancement of intelligence data.	Studies ongoing to determine ways to develop national intelligence collection assets.
EL 1205	Provide obstacles for rapid detection and removal of mines.	Delayed until study completed.

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Secret**West German Force Goals Not Being Fully Implemented^a (continued)**

Force Goal Number	Description	Status
Navy		
EM 305	Modernize existing naval mines by 1990.	Implementation extended until 1995.
EM 525	Establish interoperability for command and control information system.	Implementation postponed to 1991.
EM 527	Install ship-shore-ship buffer equipment.	Implementation postponed until system defined.
EM 535	Complete fitting of wide-band VINSON secure voice equipment.	Implementation postponed to 1988.
EM 545	Develop NATO identification system with other allies.	Implementation postponed pending progress in NATO.
EM 605	Provide additional electronic warfare capabilities.	Partial and delayed implementation.
EM 610	Provide electronic counter-countermeasure capabilities for electromagnetic equipment.	Existing equipment will not be modified.
EM 611	Improve deception and jamming capabilities.	Delayed until equipment has been specified.
EM 620	Provide shipborne electronic countermeasure system for antiship missile defense.	Extended installation of active deceptive ECM equipment for DDGS 101A class. High-power jamming equipment will not be installed on last PGGS until 1991. Electro-optical infrared jamming/deception equipment still a study item.
EM 625	Provide electronic support measure radar/direction finding intercept and automatic threat alert capability on ships.	Partial implementation since certain items are still under consideration.
EM 705	Provide NBC protection, detection, and decontamination equipment.	Implementation delayed.
EM 815	Provide 45-day reserve stock of fuel in protected or hardened facilities.	Partial implementation because of a lack of infrastructure funding.
EM 905	Replace anti-air artillery systems by 1990.	Implementation delayed because of a lack of funds and personnel.
EM 915	Protect vital logistic facilities.	Implementation extended to 1995.
Air Force		
EA 004	Increase the number of Alpha Jets in each squadron from 18 to 21.	There are no plans to meet this requirement.
EA 110	Fully maintain any inherent aircraft air-to-air refueling capability.	Will only maintain 50-percent aircrew capability for F-48 and nucleus in RF-4E wings.
EA 308	Procure for all I-HAWK operation centers an advanced, ADP-based command and control system.	Due to financial constraints, acquisition of an improved command and control Automated Data Link for HAWK could not be realized.
EA 325	Introduce multifunctional information distribution system terminal for tactical aircraft.	Implementation is not under consideration.
EA 326	Install jam-resistant secure voice VHF/UHF radios in all tactical aircraft.	Partial implementation. Because of budget restrictions, F-104, RF-4E, and F-4F will not be equipped with VF.
EA 338	Extend air command and control information system to all air units.	EIFEL command and control system has entered the definition phase. Introduction planned to start in 1985.
EA 373	Provide capability to interconnect existing communications systems with colocated NATO system.	Under consideration.
EA 406	Consider participating in provision and operation of an instrument air combat maneuvering range for use by NATO forces.	Budget constraints do not allow expenditures on additional participation in ACMI.

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West German Force Goals Not Being Fully Implemented^a (continued)

Force Goal Number	Description	Status
EA 407	Provide realistic all-weather, day/night low-altitude training routes/areas.	Although under consideration, substantial change cannot be expected in the near future.
EA 409	Support need for a short-term solution to NATO requirements for airborne training on use of aircraft self-protection EW equipment.	West Germany is not in a position to support the project due to budget constraints.
EA 415	Night/all-weather weapons delivery capability.	Extended implementation since improvement of air-to-ground capability not planned for introduction until sometime in second half of 1980s.
EA 505	Accelerate programs to upgrade conventional weapons and munitions inventories.	Procurement of antiradiation medium-range precision guided standoff munition is planned after the period.
EA 605	Acquire by end of 1986 full scales of individual NBC equipment for all personnel.	Partial implementation since only one set of equipment will be provided.
EA 610	Develop and introduce improved dosimeter. Procure improved chemical detection and monitoring equipment.	Extended implementation for dosimeters and chemical equipment is only under consideration.
EA 625	By end of 1986 provide decontamination capability. By end of 1986 provide semihardened, toxic-free shelters on airfields.	Decontamination schedule only partially implemented. Partial implementation since complete collective protection on airfields and for all ground environmental units cannot be realized within the planning period owing to a lack of funds.
EA 711	By end of 1986 provide aircraft shelters for balance (30 percent) of aircraft.	Not planned until second half of 1990s.
EA 712	Improve airfield damage repair capability.	Delayed until personnel are trained.
EA 717	Plan for logistics sustainment.	Under consideration.
EA 805	Provide airfield point defense (SHORAD).	Under consideration, but no substitute plan to cover all air bases reported.
EA 812	Provide splinter protection of radar and communications equipment.	Protection measures initiated.
EA 815	Improve land/maritime communications interface.	No implementation planned. Improved secure communications interface system not planned until beyond the 1990s.
EA 824	Improve protection of air traffic control facilities.	Partial implementation due to insufficient funding.
EA 1007	Make radar prediction available to aircrews on a real-time basis.	Not introduced for RF-4F units because of lack of funds.
EA 1011	Provide reconnaissance aircraft committed to AFNORTH with a terrain reconnaissance capability.	Will not be implemented.
EA 1008	Deploy an intra-theater system to permit immediate transmission of selected imagery to users.	No plans to implement.
EA 1015	Equip forward air controllers with a radar beacon.	Not under consideration.

^a Based upon the Federal Republic of Germany's Reply to the Questionnaire for the 1984 Defense Planning Review.

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